

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 31

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RAPHAEL ROM

Appeal No. 1997-2066
Application 08/537,408¹

ON BRIEF

Before KRASS, BARRETT, and BLANKENSHIP, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

¹ Application for patent filed October 2, 1995, entitled "Method And Apparatus For Maintaining Connectivity Of Nodes In A Wireless Local Area Network," which is a continuation of Application 08/316,078, filed September 30, 1994, now abandoned, which is a continuation of Application 07/941,735, filed September 8, 1992, now abandoned.

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This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1-21.

We reverse.

BACKGROUND

The invention relates to a method and apparatus for maintaining connectivity of nodes in a wireless local area network (LAN). In conventional cellular telephone systems, the "handoff" process of nodes between basic service areas (BSAs), otherwise referred to as "cells," is controlled solely by the base stations, otherwise referred to as access points (APs). Due to the asymmetric nature of the radio links, the node itself can best determine the quality of the signal received at the node. In Appellant's invention, the node determines an AP to select for reassociation after handoff. The method of conducting the handoff is evident from claim 1, reproduced below.

1. In a wireless local area network (LAN) comprising a plurality of cells, each cell including at least one access point for communicating information between cells and at least one node for communicating via the LAN through said access points, a method for maintaining connectivity of a node in the wireless LAN comprising the steps of:

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(a) the node selecting a second access point as a candidate for accepting a handoff of the node from a first access point;

(b) communicating an instruction from the node to the first access point instructing the first access point to relay a request to the second access point that the second access point accept a handoff of the node from the first access point to the second access point;

(c) directly relaying said request from the first access point to the second access point; and

(d) performing the handoff, such that the node communicates with the second access point.

The Examiner relies on the admitted prior art (APA) that it was known for the handoff process to be controlled solely by the base station (specification, p. 3, lines 6-10) and on the following prior art:

1989	Labeledz	4,797,947	January 10,
1989	Yamauchi et al. (Yamauchi)	4,881,271	November 14,
1993	Harrison	5,181,200	January 19,
1990)		(filed October 29,	
1994	Kojima et al. (Kojima)	5,323,446	June 21,
1992)		(filed April 17,	
1991	Gilhousen et al. (Gilhousen) WO 91/07020		May 16,
	(International application published under the Patent Cooperation Treaty)		

The rejections, as stated by the Examiner, are:²

Claims 1-21 stand rejected under 35 U.S.C. § 112, first paragraph, as based on a lack of enabling disclosure.

Claims 1 and 8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Gilhousen.

Claims 1-21 stand rejected under 35 U.S.C. § 102(e) as being clearly anticipated by Kojima.

Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilhousen in view of what was well known in the art as exemplified by Gilhousen.

² The statements of the rejection have some technical inaccuracies. For example, the Examiner states that "[c]laim 4 is rejected under 35 U.S.C. § 103 as being unpatentable over Gilhousen and Labedz as applied to claims 1-3 and 8 above, and further in view of Yamauchi . . ." (EA8). Since claim 4 depends directly from claim 1, the statement about "as applied to claims 1-3 and 8 above" should just be "as applied to claim 1 above." Also, since claim 1 was rejected only over Gilhousen, and since the Examiner only applies Yamauchi for the limitations of claim 4, Labedz should not be mentioned in the statement of the rejection because it is not in the chain of dependencies of claim 4. Similar problems exist with respect to the rejections of claims 6-10. For example, the rejection of claims 6 and 7 should be over Gilhousen, as applied in the rejection of claim 1, further in view of Harrison. Nevertheless, to avoid confusion, we state the rejections as found in the Examiner's Answer.

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Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilhousen and Labedz.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilhousen and Labedz, further in view of Yamauchi.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilhousen, Labedz, and Yamauchi, further in view of Gilhousen.

Claims 6 and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilhousen, Labedz, and Yamauchi, further in view of Harrison.

Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilhousen, Labedz, Yamauchi, and Harrison, further in view of the APA.

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilhousen, Labedz, Yamauchi, and Harrison, further in view of what was well known in the prior art as exemplified by Gilhousen.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilhousen, Labedz, Yamauchi, and Harrison.

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Claims 12-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilhousen, Labedz, Yamauchi, and Harrison as applied to claims 1-10.

We refer to the Final Rejection (Paper No. 25) and the Examiner's Answer (Paper No. 28) (pages referred to as "EA__") for a statement of the Examiner's position, and to the Appeal Brief (Paper No. 27) (pages referred to as "Br__") for a statement of Appellant's arguments thereagainst.

OPINION

35 U.S.C. § 112, first paragraph, enablement

"The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation." United States v. Telectronics, Inc., 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988) (citing Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986)). A patent need not teach, and preferably omits, what is well known in the art. Paperless Accounting, Inc. v. Bay Area Rapid Transit System, 804 F.2d 659, 664, 231 USPQ 649, 652 (Fed. Cir. 1986). The U.S. Patent and

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Trademark Office must support a rejection for lack of enablement with reasons. In re Marzocchi, 439 F.2d 220, 223-24, 169 USPQ 367, 369-70 (CCPA 1971).

We conclude that the Examiner has not set forth persuasive reasons to establish a prima facie case of lack of enablement for the claimed subject matter. It is clear from Appellant's specification that the invention is directed to an improved way of maintaining connectivity using the structure of a conventional wireless local area network (LAN). Thus, the nodes, the access points, the cell arrangement, the way of communicating between access points, etc. in the preamble of claim 1 are all admitted to be known in the prior art. This is not a case where the elements were not known to exist in the prior art. Cf. In re Buchner, 929 F.2d 660, 18 USPQ2d 1331 (Fed. Cir. 1991) (no evidence that phase comparator having four inputs and one output and divider having two inputs and one output were known in the prior art). The Examiner's questions (EA4) about how processing units 71, 75, 79 in figure 6 work and whether they are prior art devices or new devices, and about how the coordinator 12 functions, ignore the disclosed conventional nature of those elements.

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The Examiner fails to provide any evidence that one of ordinary skill in the art would not have known what structure to use to implement the hardware of the wireless LAN. In addition, Appellant has submitted a declaration which identifies a prior art publication by R.E. Kahn et al. (Kahn), Advances in Packet Radio Technology, Proc. of the IEEE, Vol. 66, No. 11, Nov. 1978, pp. 1468-1496, which discloses a packet radio suitable for implementing both the nodes and the access points that could be used in combination with the method steps and apparatus of the present invention. The Examiner finds that this is an impermissible attempt to incorporate additional disclosure (EA14). However, it is clear that Appellant cites the Kahn article as evidence of knowledge of those of ordinary skill in the art, which does not have to be put in the application. The Examiner has not shown that the LAN was not known in the art.

The improved method and apparatus for maintaining connectivity lies in the specific steps (method claims 1 and 11) and programming logic (claim 12) by which the node participates in the decision as to whether it will be handed off and, if so, to which access point. Contrary to the

Examiner's suggestion (at EA13-14) that if the claimed invention is an improvement to an existing system, the claims should be in Jepson format under 37 CFR § 1.75(e), U.S. patent law does not compel that claims be put in Jepson format. The Examiner has not established that one of ordinary skill in the art would have been unable to implement the claimed method steps or programming logic without undue experimentation. For example, the Examiner does not explain why one of ordinary skill in the art would have been unable to program a node to perform the step of "(a) the node selecting a second access point as a candidate for accepting a handoff of the node from a first access point" (claim 1) without undue experimentation. The specification discloses that the node might make this determination based on the quality of the signal (specification, p. 9). Appellant's declaration, paragraph 8, notes that the Kahn article describes that there are several ways a packet radio can determine the quality of a radio link and, based upon this disclosure, it was within the level of ordinary skill in the art to build a node packet radio programmed to select another packet radio (a second access point) as a candidate for handoff. Moreover, Gilhousen

discloses step (a) without any description of structure; thus, Gilhousen presumes the implementation is within the level of ordinary skill in the art. Nor has the Examiner explained why steps (b) through (d) of claim 1 would not have been enabling to one having ordinary skill in the art and has not addressed Appellant's declaration, paragraphs 9 and 10, as to the enablement of these limitations.

In conclusion, the Examiner has failed to establish a prima facie case of lack of enablement. The rejection of claims 1-21 under § 112, first paragraph, is reversed.

35 U.S.C. § 102(e) over Kojima

Appellant argues that Kojima fails to teach or suggest:
(1) communicating an instruction from the node to the first access point instructing the first access point to relay a request to the second access point that the second access point accept a handoff of the node from the first access point to the second access point; and (2) directly relaying said request from the first access point to the second access point, which are steps (b) and (c) of claim 1. It is argued that Kojima teaches a node sending switching requests directly to both the first and second access point and, thus, there is

no teaching of requesting the first access point to relay a request and there is no relaying of any request from the first access point to the second access point (Br8).

With respect to the relevant limitations, the Examiner repeats the findings of the final rejection (EA6):

The mobile station (node) selects a second base station ([second] access point) based on signal strength and communicates a request (instruction) to a first base station ([first] access point) to handoff between base stations (col. 1, line 45-col. 2, line 43; Figures 1, 2, 8A-8D). The first base station ([first] access point) relays the request to the second base station ([second] access point) through a system controller 11 (col. 3, lines 3-35).

Kojima discloses (col. 6, lines 3-17):

If the cordless station is leaving the cell of base station 20_1 and entering the cell of base station 20_2 . . . the controller of cordless station 40 . . . selects a second, idle timeslot to establish a radio channel with base station 20_2 and transmits a channel switching request signal. This request signal is received by base stations 20_1 and 20_2 and passed to CLIC's 14_1 and 14_2 of PBX 10 and thence to main controller 11. When this occurs, the speech signal from cordless station 40 is also carried on the second timeslot and it reaches a terminal of the time-division switch 12 through path 40', while it is being transported on path 40a through base station 20_1 .

Figure 8A shows the request going from the cordless station 40 to both base stations 20_1 and 20_2 . It is clear that Kojima transmits a channel switching request signal to both the current base station 20_1 (first access point) and the

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requested base station 20₂ (second access point). Kojima does not send a request to accept a handoff to the current base station 20₁ (first access point), with a request to relay the request to base station 20₂ (second access point), and no request is relayed, directly or otherwise, from base station 20₁ (first access point) to base station 20₂ (second access point). Therefore, the Examiner erred in finding that Kojima anticipates the limitations of steps (b) and (c) of independent claim 1, which limitations find direct correspondence in independent claims 11 and 12. Accordingly, the rejection of claims 1-21 is reversed.

35 U.S.C. § 102(b) over Gilhousen

Appellant argues that Gilhousen fails to teach or suggest: (1) communicating an instruction from the node to the first access point instructing the first access point to relay a request to the second access point that the second access point accept a handoff of the node from the first access point to the second access point; and (2) directly relaying said request from the first access point to the second access point, which are steps (b) and (c) of claim 1. It is argued that Gilhousen teaches a mobile unit (node)

sending a signal to its current cell-site (first access point) requesting a handoff which is forwarded to a system controller, which performs the handoff, but there is no evidence that the request is forwarded directly or otherwise from the first access point to the second access point (Br9).

The Examiner finds that "[t]he first cell-site ([first] access point) relays the request to the second cell-site ([second] access point) through a system controller 10 (page 6, line 33-page 7, line 1)" (EA6).

Gilhousen discloses that the request for handoff to a new cell-site is relayed to the system controller 10 and the system controller handles the handoff process by assigning a modem in the new cell-site (second access point) and giving it information about the call (p. 6, line 17 to p. 7, line 1; p. 12, lines 20-32). The system controller 10 is not a second access point. The Examiner errs in finding that the request is relayed "through" the system controller 10 to a second access point.

The Examiner further states (EA18):

[T]he phrase "directly relaying" should be interpreted to mean a communication which is transmitted by means of the LAN as a whole from one point to another. The fact that the communication may temporarily be held in a hub,

router, or another node (i.e., token bus/loop repeater) is transparent to the transmission operation, what is important is that any communication sent from the first point to the next is not modified by a relaying unit along the way to change the content of the message and its purpose. Gilhousen, Kojima, and Harrison transparently relay any messages sent into the network from one point to another without changing the content of the messages. Thus, both Gilhousen and Kojima operate in the manner indicated by the Applicant's disclosure and the Examiner maintains that the rejections made based upon Gilhousen or Kojima, respectively, are proper.

We agree with the Examiner that the phrase "directly relaying" does not exclude going unchanged through intermediate nodes (a node in the sense of a junction between two connectors, as opposed to the mobile nodes). However, under the Examiner's own interpretation of "directly relaying" as not allowing any modification of the message, the handoff request is not directly relayed or passed "through" the system controller 10 in Gilhousen because it is the system controller which handles the request, not the second cell-site (second access point). It is true that Gilhousen discloses a mobile initiated handoff, but the implementation is not the same as what is claimed. This difference in implementation is commented on in Appellant's declaration regarding the enablement rejection (paragraph 9):

The first access point can be programmed to relay the request directly to the second access point without the intervention of a central system controller. The choice of whether to relay the request directly between access points or use a central controller is a matter of programming a microprocessor-based packet radio to achieve the desired communications function.

Because we find that Gilhousen does not teach

(1) communicating an instruction from the node to the first access point instructing the first access point to relay a request to the second access point that the second access point accept a handoff of the node from the first access point to the second access point, and (2) directly relaying said request from the first access point to the second access point, the Examiner has failed to establish a prima facie case of anticipation. The anticipation rejection of claims 1 and 8 is reversed.

35 U.S.C. § 103(a)

The Examiner rejects claims 2-11 over Gilhousen in combination with one or more of Labedz, Yamauchi, Harrison, the APA, and what was well known in the art. We find that the added prior art does not cure the deficiencies with respect to Gilhousen. Thus, the rejections of claims 2-11 are reversed.

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The Examiner finds that limitations of apparatus claims 12-21 track the steps of method claims 1-10 and rejects claims 12-21 for the reasons stated with respect to claims 1-10. The Examiner concludes that the apparatus is simply a logical implementation of the steps disclosed in the references (EA12). Because Gilhousen does not disclose the function of "forming an instruction instructing said first access point to relay a request to said second access point requesting that said second access point accept a handoff of said node from said first access point, and causing said instruction to be communicated to said first access point" in claim 12, which is similar to steps (b) and (c) of claim 1, discussed supra, the rejection of claim 12 is reversed. Because the additional prior art to Labedz, Yamauchi, Harrison, the APA, and what was well known in the art does not cure the deficiencies of Gilhousen, the rejections of dependent claims 13-21 are reversed.

CONCLUSION

The rejections of claims 1-21 are reversed.

REVERSED

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